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ONTARIO
DEPARTMENT OF EDUCATION

ADVANCED TECHNICAL EVENING CLASSES

REQUIREMENTS FOR CERTIFICATES

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Issued by Authority of
The Minister of Education

ADVANCED TECHNICAL EVENING CLASSES

The need for qualified personnel in industry requires no elaboration. The problem is to satisfy the need for the technicians which the Canadian economy requires.

Advanced Technical Evening Courses have been established in Ontario to give persons presently employed in industry an opportunity to improve themselves in their particular spheres of activity, and, in a broader sense, to meet the requirements of industry for a supply of qualified technical personnel. The programme is sufficiently flexible to meet the needs of the individual, giving him the maximum opportunity for self-improvement. Graduates of these three-year evening courses should be capable of filling positions of responsibility at the technical level.

Industrialists in Ontario have indicated a high regard for the evening class opportunities which are offered in Great Britain leading to the Ordinary and Higher National Certificates. The Advanced Technical Evening Courses are similar to the British courses and lead to certificates issued by the Minister of Education.

The Association of Professional Engineers of Ontario has set up its requirements for several grades of professional standing under the title of Engineering Technician. At the present time the Grade I Advanced Technical Evening Course Certificate is accepted as an **academic pre-requisite** for Engineering Technician Grade II. A student who proceeds beyond the Department of Education's Grade I Certificate may apply to the Association of Professional Engineers for further recognition.

Results in those centres in which the programme has been in operation since 1952 indicate that graduates are succeeding in improving their positions in industry and qualifying themselves for further advancement.

GRADE I CERTIFICATE COURSE

To complete this Course, standing in nine subjects is required, and attendance at classes over a period of three years will normally be necessary to attain this standing. For each subject the student must attend fifty hours of classroom instruction by a competent teacher, and must complete successfully such assignments, tests and examinations as may be prescribed.

Standing is obligatory in four subjects:

English I
Mathematics I
Mathematics II
Mechanics I or Physics I

In addition to these obligatory subjects, the student must attain standing in five optional subjects. These optional subjects should be chosen, in consultation with the principal, from those listed in Appendix I.

GRADE II CERTIFICATE COURSE

Standing in nine subjects must be attained to complete this Course. For each subject the student must attend fifty hours of lecture or classroom instruction and, where applicable, additional laboratory work may be required. Laboratory work may be counted as a credit or part of a credit, depending on the amount of time involved.

Standing is obligatory in two subjects

English II
Mathematics III

In addition to these obligatory subjects, seven other subjects must be taken, including at least four lecture subjects from a field of specialization, such as Mechanical, Electrical, Chemical, or Electronics. These subjects are listed in Appendix II.

REQUIREMENTS FOR ADMISSION

1. **Grade I Certificate Course:** The Secondary School Graduation Diploma (Grade 12) or its equivalent.
2. **Grade II Certificate Course:** Successful completion of the requirements of the Grade I Certificate Course, or its equivalent, including the necessary pre-requisite subjects.

CREDITS

Credit for any subject of the Grade I Certificate Course may be allowed on presentation of proof of standing in the subjects shown opposite to it in the following list:

Mathematics I	—	Grade 13 Algebra, Trigonometry and Statics.
Mathematics II	— —	Grade 13 Algebra, Trigonometry, and Statics, and Geometry
Mechanics I or Physics I	—	Grade 13 Physics, Trigonometry and Statics.
Chemistry I	—	Grade 13 Chemistry.
Electricity I	—	Grade 12 Vocational Electricity. (Major Course)
Technical Drawing I	—	Grade 12 Vocational Drafting. (Major Course)

Standing in subjects of the British Ordinary National Certificate and the Higher National Certificate may be assessed by the principal as credits for subjects of the courses.

A maximum of six credits only may be allowed toward any Advanced Technical Evening Course Certificate. An applicant for credit must supply adequate proof that he has satisfactorily completed a study of the subject or subjects for which he expects credit.

When he is satisfied that a student is entitled to a credit, the principal should apply to the Superintendent of Secondary Education for a form on which he may recommend that credit be granted. In special cases, such as those listed below, provided a student has Grade 12 standing, the principal may request the applicant to write a qualifying examination. A copy of the examination questions must be forwarded to the Superintendent of Secondary Education for approval before the candidate writes the examination.

Examples of special cases in which candidates may be asked to write a qualifying examination:

Students who have attended Evening Courses of at least 50 hours' duration.
Students who have completed Correspondence Courses of at least 100 hours' duration.

Students who are over 25 years of age and have had at least three years' industrial experience related to the subject in which credit is desired.

STANDARDS

Regular tests and examinations are a part of the course in each subject. The passing grade in each subject is 50%.

In order to ensure a general high standard, copies of the final examination question papers must be approved by the Department of Education before they are given.

During the term, regular inspections of the teaching of the Advanced Technical Evening Classes are carried out by an inspector from the Secondary Schools Branch of the Department of Education. Text-books used in all subjects are subject to the approval of the Department.

PRE-REQUISITES

It is the responsibility of the principal to ascertain that a student has completed the necessary pre-requisites before admitting him to classes in any subject of the course.

ASSIGNMENTS

During the instructional periods the instructor should plan to use one-third to one-half of the time assisting with individual and class problems which arise. The instructor should also assign homework. The length of time to be spent on this assignment should be approximately equal to that spent in the classroom. These assignments should be corrected and the marks recorded by the instructor.

ADMINISTRATION

1. A School Board desiring to establish and operate these classes should apply to the Minister of Education for permission to do so.

   When permission has been granted, all further correspondence with reference to Advanced Technical Evening Classes, and all requests for necessary forms, reports, and certificates should be addressed to the Superintendent of Secondary Education, Department of Education, Parliament Buildings, Toronto, Ontario.

2. A list of the teaching staff, with their qualifications and subjects to be taught, should be submitted for approval before the classes are commenced.

3. An enrolment form showing the number enrolled, the subject, the hours and evenings involved, and the teacher's name, should be forwarded as soon as enrolment has been completed.

4. Outlines of courses for the various subjects may be obtained upon application.

5. Final marks for each student who writes a final examination are to be reported on forms which are available upon application.

6. When a student has completed satisfactorily an approved course of study, the principal may apply for the appropriate Grade I or Grade II Certificate.

7. A certificate of standing (2½ inches x 4 inches) for any part of the course may be obtained, to be presented by the principal each year to any student who completes satisfactorily one or more subjects.

GENERAL

1. Final examinations should be set by the instructor and should be forwarded by the principal for approval, one month prior to the date of the examination.

2. All final answer papers should be retained by the principal for one year following the date of the examination.

3. In order to make up a final mark, the final examination must count at least 70%, and class work, tests and homework may count up to 30% of the final mark.

4. A permanent record of attendance must be kept and each student's attendance record must be satisfactory to the principal before he recommends the award of a certificate.

WHERE TO APPLY

Applications for further information should be addressed to the Superintendent of Secondary Education, Department of Education, Parliament Buildings, Toronto, Ontario.

APPENDIX I

GRADE I CERTIFICATE COURSE

Obligatory Subjects:

English I
Mathematics I
Mathematics II
Mechanics I or Physics I.

Optional Subjects. (Five to be chosen)	**Pre-requisites.**
Chemistry I (General)	
Chemistry II (Inorganic I)	Chemistry I and Mathematics I
Chemistry III (Physical I)	Chemistry I and Mathematics II
Chemistry IV (Organic I)	Chemistry I
Electricity I (D. C. Fundamentals)	Mathematics I
Electricity II (A. C. Fundamentals)	Electricity I and Mathematics II
Electricity III (A. C. Theory)	Electricity I and Mathematics II
Electrical Measurements	Electricity I and Electricity II
Electronics I	Electricity I and Electricity II, or Electricity I and Electricity III
Electronics II	Electronics I
Heat	
Mechanics II	Mechanics I and Mathematics II
Metallurgy I	Chemistry I
Strength of Materials I	Mechanics I and Mathematics II
Machine Design I	Strength of Materials I and Technical Drawing I
Tool Design I	Strength of Materials I and Technical Drawing I
Instrumentation I	Physics I
Instrumentation II	Instrumentation I
Physics I	Mathematics I and Mathematics II
*Technical Drawing I	Mathematics I
Workshop Technology I	Mathematics I

NOTE: A pre-requisite, with the approval of the principal, may be taken in the same year as the subject for which it is a pre-requisite, but, not concurrently with it.

* It is recommended that those students who are not eligible for a credit in Technical Drawing I should elect this subject as one of their optional subjects.

APPENDIX II

GRADE II CERTIFICATE COURSE

Obligatory Subjects:

English II
Mathematics III

Optional Subjects. (Seven to be chosen)	**Pre-requisites.**
Chemistry V (Inorganic II)	Chemistry II
Chemistry VI (Physical II)	Chemistry III
Chemistry VII (Organic II)	Chemistry IV
Electricity IV (A. C. II)	Electricity II or Electricity III, and Mathematics III
Electricity V (D. C. Machinery) and Electricity V — Laboratory	Electricity I and Electricity II, or Electricity I and Electricity III, and Mathematics III
Electricity VI (A. C. Machinery) and Electricity VI — Laboratory	Electricity I, Electricity II, and Mathematics III
Electronics III	Electronics I and Electronics II
Electronics IV	Electronics I and Electronics II
Electronics V (Communications)	Electronics IV
Electronics VI (Transistors)	Electronics I, Electronics II, and Electricity IV
Electronics VII (Pulse Circuits)	Electronics III
Industrial Electronics	Electricity I and Electricity II, or Electricity I and Electricity III, and Electronics I
Mathematics IV	Mathematics III
Applied Mechanics I	Mechanics I, Mechanics II, and Mathematics II
Fluid Mechanics I	Mechanics I, Mechanics II, and Mathematics III
Mechanisms I (Theory of Machines)	Mechanics I, Mechanics II, and Mathematics III
Physics II	Physics I and Mathematics III
Strength of Materials II	Strength of Materials I and Mathematics III
Machine design II	Machine Design I and Mathematics III
Tool Design II	Tool Design I
Electrical Machine Design I	Electricity I, Electricity II and Mathematics III

NOTE: 1. A pre-requisite, with the approval of the principal, may be taken in the same year as the subject for which it is a pre-requisite, but not concurrently with it.

2. Where applicable, laboratory work will be required, in addition to the 50 hours lecture time per subject. Such laboratory work will be counted as a credit, or as part of a credit, depending upon the amount of laboratory work required for a particular subject.

3. Additional subjects may be approved by the Department of Education from time to time, as the need rises.